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Docket Number 01 USN 152 13viii04

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

PATENT APPLICATION

Applicants:	McLoughlin, S. J.	Date:	13 August 2004
Serial No.:	10/009,700	Examiner:	Albert K. Wong
Filed:	October 25, 2001 (U.S. National)	Group Art:	2635
For:	Apparatus and Method for Transmitting Information to and Communicating with a Downhole Tool		

RESPONSE TO FIRST OFFICE ACTION

To the Honorable Commissioner for Patents
Mail Stop Amendment – NO FEE
P.O. Box 1450
Alexandria, VA. 22313-1450

Dear Sir:

This is Applicants' first response to the subject application in reply to the Office Action mailed on 18 May 2004. A shortened statutory response period of three months was set by the Examiner making the response due on or before 18 August 2004. In response to the Office Action, please amend the above-identified application, without prejudice, as follows:

Summary of the Office Action

The Examiner quoted from the appropriate paragraphs of 35 U.S.C. 102 that formed the basis for the first set of rejections:

> A person shall be entitled to a patent unless
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States

The Examiner rejected Claims 1-6, 10, 12 and 16-20 as being anticipated by Engelder. The Examiner listed each and every reason for his rejection of claims 1, 2, 3-4, 5, 6, 10, 12 and 16-20.

The Examiner quoted from the appropriate paragraphs of 35 U.S.C. 103(a) that formed the basis for the second set of rejections:

> (a) A patent may not be obtained through the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The Examiner rejected Claim 7 under 35 U.S.C. 103(a) as being unpatentable over Engelder and explained his reason for the objection.

The Examiner objected to claims 8, 9, 11 and 13-15 as being dependent on a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The Examiner declared that the prior art made of record and not relied upon is considered pertinent to Applicant's disclosure stating that the art is considered relevant because it teaches variations within the field of rotational communication in a borehole. The Examiner encouraged Applicant to consider the quoted references.

Finally, the Examiner allowed that the drawings filed on 25 October 2001 were accepted.

General Remarks on the Prior Art

It is important to first summarize the differences between the prior art and the instant invention. First and foremost the instant invention is based on the device first disclosed by McLoughlin and Chance in WO 96/31679 which matured into U.S. Patent 5,979,570. The McLoughlin/Chance device is a three part downhole tool having essentially a rotating part (or sub-assembly) and a stationary part (or sub-assembly). Thus, downhole rotation of the drill string may be measured directly as relative rotation between the rotating and non-rotating assemblies.

At the time of Engelder (4763258) two part downhole assemblies were relatively unknown (i.e., a rotating and non-rotating) and certainly were not used at or near the tool face. Thus, Engelder must determine rotation of the downhole tubular by measuring against a known physical property or the Earth's gravitational or magnetic field. In a similar manner Mougal (6267185) was faced with the Engelder patent and uses an inertial guidance system (gyro) to determine rotation by measuring against the gyroscopic instrument.

In both cases the devices are subject to tremendous downhole shock - the drilling operation - and tend to fail after a long period.

Van Steenwyk (6608565) faced the Mougal and Engelder patents and looks at drill string vibration. Thus, Van Steenwyk uses vibration sensors to see if the drill string is rotating and further proposes an accelerometer. It is interesting to note that Van Steenwyk claims priority on his invention based on a provisional application filed on 27 January 2000. The device at bar claims priority based on a U.S. provisional application filed on April 27, 1999, considerably before Van Steenwyk.

Owens et al. (5456316) relates to techniques used with wireline tools; thus it is believed that Owens does not relate to the device at bar. Cray et al (6237404) relates to an apparatus and method to optimize formation measurements during a "quiet" environment - that is while drilling ceases. Similarly it is believed that Cray does not relate to the device at bar. Underwood et al. (5332048) relates to a stabilizer controlled drilling system and receives no tubular transmitted information.